THE EFFECT OF CREDIT RISK MANAGEMENT ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN TANZANIA

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION OF THE OPEN UNIVERSITY OF TANZANIA

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CERTIFICATION

The undersigned certifies that has read and hereby recommends for acceptance by the Open University of Tanzania the dissertation entitled ***"The Effect of Credit Risk Management on the Financial Performance of Commercial Banks in Tanzania"*** submitted in partial fulfillment of the requirements for the degree of master of Business Administration of the Open University of Tanzania.

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Dr. Proches Ngatuni

Supervisor

……..……..……..

Date

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DECLARATION

I, **Ambrose Ntangeki Nshala,** do hereby declare that this dissertation is my own original work and that it has not been submitted for a similar degree in any other University.

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Signature

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Date

DEDICATION

To my wife, Theodosia Muhulo Nshala, for her unrivaled support and love.

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I want to thank Mr. Benson Bimbiga, a true friend indeed, for being always ready to assist whenever I needed his help. My sincere appreciation to my Supervisor, Dr. Proches Ngatuni, without whom this work would not have been completed. His passion and dedication to his work is unmatchable. He did not only supervise but he encouraged me, inspired and imparted in me a desire to continue to the next step.

ABSTRACT

The purpose of this study was to determine the effect of credit risk management on the profitability of commercial banks in Tanzania. Secondary panel data was collected from published financial statements of a sample of 19 commercial banks covering a period of 11 years, from 2005 to 2015 and used for the analysis. Financial profitability of the banks was proxied by Return on both assets and equity ratios. Independent variables included, nonperforming loan ratio, capital adequacy ratio, total loans to total deposits ratio and loan loss provision to nonperforming loan ratio. Panel data regression analysis were used to run the estimation model, specifically pooled regression model. Results reveal that there was a significant negative relationship between the NPL/TL ratio and ROE. Also, there was a significant negative relationship between the LLP/NPL ratio with both ROE and ROA. It was also revealed that CAR had an insignificant positive relationship with ROE but significant positive relationship with ROA. However, TL/TD ratio had negative but insignificant relationship with both ROE and ROA. It is concluded that increasing nonperforming loans relative to total loans reduces the profitability of a bank or financial institution and so is increasing loan loss provisions relative to non-performing loans. Therefore, management and all stakeholders are required to put in place a robust credit risk management structure that will strengthen the loan assessment process so as to minimize possibility of issuing potentially bad loans. Furthermore, management should put in place an effective credit portfolio management mechanism so as to effectively follow up on all issued credit facilities so as they do not turn bad.

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LIST OF ABBREVIATIONS AND ACRONYMS

ADF	African Development Fund
BCBS	Basel Committee on Banking Supervision
BFIA	Banking and Financial Institutions Act
CAR	Capital Adequacy Ratio
ERP	Economic Recovery Programme
IFRS	International Financial Reporting Standards
IRB	Internal Rating-based
TA	Total Assets
TL	Total Loans
TD	Total Deposits
LLP	Loan Loss Provision
NPL	Non-performing Loan
NPLR	Non-performing Loan Ratio
ROA	Return on Assets
ROE	Return on Equity
ROC	Return on Capital
RWA	Risk-Weighted-Assets

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

From Independence in 1961, Tanzania has experienced different economic policies but the remarkable one was the Arusha Declaration in 1967, principle of which was Ujamaa (socialism). During this time all privately owned institutions were nationalized, banks being among them. Government of Tanzania (GOT) embarked on major economic reforms in 1986 following the launching of the Economic Recovery Programme (ERP), (ADF, 2000). The financial reforms came into effect after the approval of the Banking and Financial Institutions Act (BFIA) in 1991. This was accompanied by liberalization of interest rates, elimination of administrative credit allocation, strengthening of the Bank of Tanzania's role in regulating and supervising financial institutions, restructuring of state-owned financial institutions especially banks, and allowing entry of private (both local and foreign) financial institutions (Randhawa & Gallardo, 2003; URT, 2000 as cited by Kessy, 2011).

After the liberalization of the banking sector, Tanzania has experienced the influx of many banks in the industry, some local, and others regional or multinationals. Twenty-five (25) years after these reforms the banking sector is now formed with 34 fully fledged commercial banks, and other 20 community banks and microfinance banks which makes the 54. Reforms have brought good services to customers, efficient usage of resources, expansion of branch networks to all regions in the country and above all profitability to investors. According to the BOT (2014), the banking sector has been growing steadily for the past ten years. The total assets of

the whole banking industry have grown from TZS 4,287 billion in 2005 to TZS 22,473 billion in 2014. The portfolio of Loans, Advances and Overdraft has also increased from TZS 1,446 billion to 11,886 billion by the end of 2014 while total deposits closed at TZS 17,524 billion from TZS 3,598 billion in 2005. For the past five years it has been reported that return on assets (ROA) is at an average of 2.5% while return on equity (ROE) is at an average of 13.3%. From the numbers above it is important to note that loans, advances and overdrafts make around 53% of the total assets of the banks, thus making it the most significant asset in bank. It is also equally important to note that credit portfolio makes 66.7% of the total earning assets.

Furthermore, net interest income makes 53% of total income of banks. Banks depend very much on the performance of their credit portfolios and thus any mismanagement thereof can inflict severe damage on the bottom line of a particular bank and sometimes it can wipe out the entire capital of the bank. Although commercial banks face a few other risks such as liquidity risk, interest rate risk, foreign exchange risk, operational risk, it is imperative to place a special attention on credit risk embedded on the huge income from credits. Globally, more than 50% of total risk elements in Banks and Financial Institutions (FI) are credit risk alone. Thus, managing credit risk for efficient management of a FI has gradually become the most crucial task. Credit risk management encompasses identification, measurement, matching mitigations, monitoring and control of the credit risk exposures (Lalon, 2015). Gestel and Baesems (2008) as cited in Li and Zou (2014) views financial sector as the backbone of the economy and therefore its failure can disrupt economic development of a

given country. The default of a small number of customers may result in a very large loss for the bank. There have been two strong examples of economic crises that were caused by failure of the financial systems. First the Latin American debt crisis burst in early 1980's that saw Mexico's bank indebtedness expanded almost 230% over the six-year period from 1976 to 1982, Brazil's 160%, Venezuela's obligations spurted 330%, Argentina's by a monstrous 550% and Chile's 850% (Wessel, 1984). Then there is the USA financial crisis of 2007 to 2009, which sent shockwaves all over the world. To the large extent, these two cases were associated with poor credit management.

Failures of financial systems attracted the attention of Basel Committee which started with an accord that regulated credit risk by according to proportionate capital available. The Basel Accord (Basel I) called for a minimum capital ratio of capital to risk-weighted assets of 8% to be implemented by the end of 1992 (Bis.org, 2014) as cited by Li and Zou (2014). Consequently, Basel II came into effect, in 2004, to better reflect banks' underlying risk and response to financial innovation like securitization. As per the BOT (2014), Tanzania has 34 fully licensed commercial banks, but when the licensed community banks and non-bank financial institutions are included the number jumps to 54. This growth of players in the financial sector brings stiff competition for quality customers in the market. But when competition gets too stiff, banks start to compromise on their lending policies and procedures so as to attract new customers. This simple fact is what caused a financial crisis in the Latin America in the 1980s and the USA crisis in 2007. It is also the same reason that led to the collapse of some Tanzanian banks like Tanzania Housing Bank

(THB), Meridian Biao Bank, Greenland Bank, First Adili Bank and Trust Bank. Because of the sensitivity and importance of the financial sector especially the relationship between credit risk and performance, significant research efforts have been directed towards the subject. A few examples of such researches include but not limited to Magnifique (2011) in Rwanda; Li and Zou(2014) in Europe; Hosna et al. (2009) in Sweden; Gizaw et al. (2015) in Ethiopia; Otieno (2013), Gakure et al.(2012), Onuko et al. (2015), and Karugu and Ntoiti (2015) in Kenya; Abiola and Olausi (2014), Ogboi and Onuafe (2013), and Kolapo, et al. (2012) in Nigeria; Lalon (2015) in Bangladesh; Poudel (2012) in Nepal; Nyamutowa and Masunda (2013) in Zimbabwe; Kodithuwakku (2015) in Sri Lanka; Singh (2014) in India and Oswari (n.d) in Indonesia.

In Tanzania, a few studies have been done around the banking industry performance See for example, Quin and Pastory (2012), Kaaya and Pastory (2013), Pastory and Mutaju (2013), and Amin et al. (2014). Pastory and Mutaju (2013) studied the influence of capital adequacy on asset quality position of banks in Tanzania. With a panel data from 33 banks in the period of six years their study reported a relationship between capital adequacy and asset quality implying that increase in nonperforming loans would worsen capital ratio.

Qin and Pastory (2012) studied the commercial banks' profitability position using one-way ANOVA and concluded that there was no significant difference on the profitability position of the banks reviewed. Abdallah et al. (2014) looked at the inverse relationship of financial risk and performance in commercial banks in Tanzania and after empirical analysis of data observed that financial risk and

performance have a significant influence on each other. However, it is only one study by Kaaya and Pastory (2013) that focused solely on credit risk management. This study picked data from only 11 out of 34 commercial banks and sampled data from seven years only, from 2005 to 2011 and by using data regression model observed that increase in credit risk tends to lower banks performance.

It is notable that despite the previous studies made in Tanzania in the financial sector, there are a number of changes such as the use of new technology, new players, new size of the market and the issuance of new regulations by BOT in 2014 that have made the industry different from that one that was researched earlier. Therefore, there is a glaring need to conduct a comprehensive study that will involve a larger number of commercial banks over a much longer period and include most current data in order to have current and conclusive results that can be relied upon by stakeholder. It is against this background that this study was designed to retest the effect of credit risk management indicators on banks' financial performance in Tanzania

1.2 Statement of the Research Problem

From the preceding background, credit risk has been shown to be behind the bank related financial crisis. It is the most critical risk among the risks that banks face. Research has shown that credit risk management is crucial for the effective performance of banks. Thus, managers acting in the best interest of the shareholders should manage the credit risk items in a minimizes the potential failures that are associated with mismanagement of the underlying indicators. Researches have focuses on identifying determinants of credit risk and how they affect performance of

banks. However, while most researches are done from the western economy, limited research is done in developing countries like Tanzania. The few researches done on banks in Tanzania, e.g. Quin and Pastory (2012), Kaaya and Pastory (2013), Pastory and Mutaju (2013), and Abdallah et al. (2014) differ in a number of ways – some of which include methodological differences and coverage. Several of them claim to have used Panel data regression for example, but little evidence is there as to whether that was actually done. The many changes in technology and regulations in Tanzania, makes follow up studies important but also with time more and more banks open operations and grow. This enables researchers to use bigger samples. Furthermore, use of panel data is important to take into account both cross-sectional and time differences in the data in estimation the effect of the credit risk variables on banks performance. Therefore, the present study will fill this gaps by using a wider sample and by using pooled regression analysis on the panel data.

1.3 Research Objectives

1.3.1 General Research Objectives

The purpose of this study was to determine the effect of credit risk management on profitability of commercial banks in Tanzania.

1.3.2 Specific Research Objectives

(i) To determine the relationship between non-performing loans (NPL) to total liability (TL) ratio and commercial banks' financial performance

(ii) To determine the relationship between capital adequacy ratio (CAR) and commercial banks' financial performance.

(iii) To determine the relationship between total loans to total deposits ratio and commercial banks' financial performance.

(iv) To determine the relationship between loan loss provision to non-performing loans ratio and commercial banks' profitability performance

1.4 Research Questions

1.4.1 General Research Question

What is the effect of credit risk management and the financial performance of commercial banks in Tanzania?

1.4.2 Specific Research Questions

(i) What is the relationship between non-performing loans to total liability ratio (NPL/TL) and financial performance of commercial banks in Tanzania?

(ii) What is the relationship between capital adequacy ratio (CAR) and the financial performance of commercial banks in Tanzania?

(iii) What is the relationship between Loans to Deposits Ratio and financial performance of commercial banks in Tanzania?

(iv) What is the relationship between Provision for Non-Performing Loans and financial performance of commercial banks in Tanzania?

1.5 Relevance of the Research

Findings from this research will have a significant impact on the whole Tanzania banking industry and beyond. The findings of this research will give credit managers, senior managers, board members and regulators bases for policy review and drawing regulations that will help mitigate credit risk to manageable levels. When credit risk

is at manageable levels, banks will improve their profitability and investor will get their return though dividends or increase in stock value.

1.6 Organization of the Dissertation

The next chapter presents a review of related literature regarding the link between financial performance and credit risk management. Chapter three sets out the research methodology. Chapter four presents and discussed the findings. Finally, chapter five concludes the study and presents recommendations.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Overview

This chapter presents the outcome of a review of literature related to this study. The chapter starts with a brief definition of key concepts, review of relevant theories and empirical literature and later develop a framework and hypothesis for this study.

2.2 Conceptual Definitions

2.2.1 Financial Performance

Financial Performance of a bank is the ability of a bank to generate income. Magnifique (2011) argues that the financial performance of banks is expressed in terms of profitability and the profitability has no meaning except in the sense of an increase of net asset. The best way to measure financial performance of a bank is through ROE and/ or ROA. Hosna et al. (2009) suggests that ROE is the most widely used indicator of profitability, along with ROA, in research. Computation of these ratios is dealt with in chapter three.

(a) Return on Equity (ROE)

ROE is a return on capital. This shows how much profit is made for each shilling invested. ROE is commonly used to measure the profitability of banks. When the capital invested is efficiently deployed the ROE becomes high, but when there is inefficiency in putting the capital to work then the ROE becomes low. Foong (2008) argues that if banks use capital more efficiently, they will have a better financial leverage and consequently a higher ROE. Because a higher financial leverage

multiplier indicates that banks can leverage on a smaller base of stakeholder's fund and produce higher interest-bearing assets leading to the optimization of the earnings. However, one may argue that the rise in ROE may be caused by a bank using too much borrowing than capital and so increase debt risk

(b) Return on Assets (ROA)

Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage. According to Guru et. al, (1999, p.7), ROA, which is the ratio of net income to total assets, measure how profitable and efficient a bank' management is, based on the total assets.

2.2.2 Credit Risk

According to Basel II (2006), credit risk is the risk of loss due to an obligator's non-payment of an obligation in terms of a loan or other lines of credit. Conford (2000) as sited by Kithinji, (2010) defines credit risk as the possibility that the actual return on an investment or loan extended will deviate from that, which was expected. Coyle (2000) also defines credit risk as losses from the refusal or inability of credit customers to pay what is owed in full and on time. Furthermore, Heffernan (1996) defines credit risk as the risk that an asset or a loan becomes irrecoverable in the case of outright default, or the risk of delay in the servicing of the loan. Bessis (2002) opined that credit risk is critical since the default of a small number of important customers can generate large losses, which can lead to insolvency. Anthony (1997) asserts that credit risk arises from non-performance by a borrower, and this may arise

from either an inability or an unwillingness to perform in the pre-committed contracted manner. Hosna et al (2009) argues that according to the Basel Accords, risks the banks face include market risk, operational risk and credit risk. Basle II has defined market risk as the risk of losses in on and off-balance sheet positions arising from movements in market prices. The capital treatment for market risk addresses the interest rate risk and equity risk pertaining to financial instruments, and the foreign exchange risk in the trading and banking books.

Operational risk is defined as the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events. Operational risk relates to the issues of precise processing, settling and taking delivery on trades for the exchange of cash (Santomero, 1997, p. 89). Credit risk is the risk of loss due to an obligator's non-payment of an obligation in terms of a loan or other lines of credit. It is a risk that counterparties in loan transactions and derivatives transactions might default, which means counterparties fail to repay the principal and interest on a timely basis (Koch & MacDonald, 2000, p. 109).

2.2.3 Credit Risk Management

Credit risk management is a process whereby a bank employs various tools in order to eliminate or minimize the probability of losing money by inadvertently lending to a person with little ability to repay the loan on time or in full in whatever circumstances they operate in. Credit risk is the biggest risk any bank faces as compared to other risks like, interest rate risk, foreign exchange risk and liquidity risk. It is therefore imperative that the bank puts in place a comprehensive process that will make the lending process smooth while effective as far as risk mitigation is

concerned. According to Hosna et al (2009), credit risk can be divided into three risks: default risk, exposure risk and recovery risk. Early (1996) and Coyle (2000) defined credit risk management as involving identification, measurement, monitoring and control of risk arising from the possibility of default in loan repayments.

For most banks, credit risk management starts at the point of first contact with the potential borrowing customer. The loan officer has to listen to the customer carefully, read the body language and ask critical questions in order to gain full understanding of the business of the customer. Then a visit to the potential customer is conducted while documents and data analysis follows. Security has to be perfected before a loan is advanced. There after periodic follow up and business site visit continues throughout the credit period. When this process is well adhered to, credit risk will be minimised, but when there is pressure to grow the loan book, some of these steps are overlooked and that is when the skyrocketing of the non-performing loans is experienced. A good example is the USA financial crisis of 2007.

2.2.4 Credit Risk Management Indicators

According to Ara, Bakaeva and Sun (2009, p.13), as cited by Li & Zou (2014), the Basel Accord links the minimum regulatory capital to the underlying risk exposure of banks. It refers to the fact that the greater the risk a bank exposed to relates to the higher amount of capital it needs. This regulation indicates the importance of capital management in risk management. The compliance with the regulatory requirement can be expressed as risk management indicators (Li & Zou, 2014). The Basel accord puts in place some regulations that help to safeguard the deposits from the public by linking the amount of credit portfolio with the amount of capital invested, the capital

adequacy ratio (CAR). CAR measures the amount of bank's capital which is related to the amount of is risk weighted credit exposure. However, CAR alone does not tell the whole story. If one wants to know the credit risk status of a bank, he or she also look at Non-Performing Loans Ratio (NPL/TL), Loans to Deposits Ratio (LD/TD) and Loans Loss Provisions ratio (LLP/NPL). As for NPL/TL, it is relevant with bank loans. Thus, it was considered reasonable to use CAR and NPL/TL in this research, and further discussion for these two variables will be present in the following sections (Li & Zou, 2014). Conclusively, the choice of CAR, TL/TD, LLP/NPL and NPL/TL are based not only on their properties and frequency of occurrences in previous studies but also their capability to bring out a more reliable result. Although there could be many indicators for the credit risk management, this study will focus mainly of the four; the CAR, TL/TD, LLP/NPL and the NPL/TL. These for ratios are more comprehensive, direct and easy to interpret.

(a) Capital Adequacy Ratio (CAR)

Capital adequacy ratio (CAR) is defined as the ratio of capital to the risk-weighted sum of bank's assets (Hyun & Rhee, 2011, p. 325). It measures the amount of a bank's capital relative to the amount of its risk weighted credit exposures (Reserve Bank of New Zealand, 2007, p.1).The risk weighting process takes into account, in stylized way, the relative riskiness of various types of credit exposures that banks have, and incorporates the effect of off-balance sheet contracts on credit risk. The higher the capital adequacy ratios a bank has, the greater the level of unexpected losses it can absorb before becoming insolvent.(Reserve Bank of New Zealand, 2007, p. 9).The general belief is that banks with strong capital base would have the

ability to absorb losses that may arise from non-performing liabilities (Adegbaju & Olokoyo, 2008).Minimum capital adequacy ratio has been developed to ensure banks can absorb a reasonable level of losses before insolvency and before depositor funds is lost (Reserve Bank of New Zealand, 2007, p.2). Applying minimum capital adequacy ratio aims to protect depositors and promote the stability and efficiency of the financial system (Reserve Bank of New Zealand, 2007, p.2).

(b) Non-Performing Loans Ratio (NPL/TL)

According to the Bank of Tanzania's management of risk assets regulation (2014), non-performing credit accommodations shall include substandard, doubtful, and loss categories and be classified by a bank or financial institution according to the criteria prescribed in these Regulations. NPL/TL is the ratio of non-performing loans to total loans (Yang, 2010, p.2019). The equation can be defined as NPL deflated by total loans (TL). NPL/TL is a financial soundness indicator which demonstrates the quality of bank loans (Park, 2012, p. 909). According to Yang, NPL/TL can adversely influence the efficiency of risk management and investment (2010, p. 2019).

Commercial banks expose themselves to the risk of default from loan borrowers. Quality credit risk assessment, risk management and creation of adequate provisions for bad and doubtful debts can reduce the banks credit risk. Brewer et al. (2006) regards non-performing loan ratio (NPL/TL) as a significant economic indicator. It implies that lower NPL/TL is related with the lower risk and deposit rate. Li & Zou (2014) further argues that that NPL is also a probability of loss which requires provision. The amount of provision is "accounting amount" which can be further

subtracted from the profit. Thus, high NPL increases the provision while reduces the profit.

(c) Loans to Deposits Ratio (TL/TD)

TL/TD indicates the credit risk appetite of the bank that exposes it to probable losses. It is measured as a ratio of total loans (TL) to the total amount of deposits (TD)

(d) Loans Loss Provisions Ratio (LLP/NPL)

The LLP is the ratio of total loan provision (LLP) to the total non-performing loans (NPL). The Bank of Tanzania Management of Risk Assets Regulation 2014 has clearly stipulated provision percentages for various classes of nonperforming loans. When a loan is especially mentioned provision will be 3%, Substandard (20%), Doubtful (50%) and Loss is 100%.

2.3 Theoretical Linkages between Credit Risk Management Indicators of Commercial Banks' Profitability

2.3.1 Relationship between NPL/TL with ROE/ROA

Since the biggest contributor of banks' income is the credit portfolio, any problem with this asset will significantly impact the amount of profit of the bank. So, when customers fail to honor their commitments to repay their loans, the bank will suspend the interest from the bad loans and in that regard the bottom line will be directly impacted. Therefore, the larger the NPL/TL ratio the lower the performance (ROE/ROA).

2.3.2 Relationship between CAR with ROE/ROA

CAR is expected to affect performance of the bank positively. This is because when the bank increases its capital, it gains the ability to service bigger single credits, it increases its capacity to expand its credit portfolio and capital is a cheap source of deposits that can be given out as a loan.

2.3.3 TL/TD Ratio Relationship with ROE/ROA

The higher the ratio the higher the performance, because deposits are expensive and any deposit that remain unused costs the bank. Therefore, it is expected that TL/TD ratio to positively affect ROE/ROA.

2.3.4 LLP/NPL Ratio with ROE/ROA

When a loan is provided for as lose in the books of a bank it hits directly on the bottom line. In that regard the higher the LLP/NPL ratio the lower the performance of the bank (ROE/ROA)

2.4 Empirical Literature Review

Many studies have been conducted in many countries around the world to assess how credit risk can affect performance of banks. In these studies, various indicators have been used to measure credit risk, but the widely used credit risk indicators are; Non-Performing Loans to Total Loans ratio (NPL/TL), the Capital Adequacy ratio (CAR), the Total Loans to Total Deposit ratio (TL/TD) and the Loan loss provision to Non-Performing Loans ratio (LLP/NPL). Bank Performance has been measure using either The Return on Equity ROE or the Return on Assets (ROA) or both. Most of these studies used the regression analysis model to analyze the data.

Kolapo et al. (2012) did a study on credit risk and commercial bank's performance in Nigeria. The study used a panel data approach. The study used NPL/TL, LLP/NPL and TL/TD ratios to determine the credit risk. On performance measurement the study used ROA as the only indicator. The study found out that there was a negative relationship between ROA and NPL/TL and LLP/NPL and a positive relationship between ROA and TL/TD ratio.

Hosna et al. (2009) researched on the credit risk management and Profitability in Commercial Banks in Sweden where they studied four major commercial banks. Their study used ROE as the performance indicator and CAR and NPL/TL as credit risk variables. They employed the regression analyses model. Their study showed that NPL/TL ratio has a significant negative effect on profitability (ROE) while CAR had an insignificant positive effect on ROE.

Li and Zou (2014) performed a study on the Impact of Credit Risk Management on Profitability of Commercial Banks: A Study of Europe. The study involved 47 largest commercial banks in Europe and used ROE and ROA as performance indicators and CAR and NPL/TL ratio as credit risk indicator. Using the panel data regression analysis model their findings indicated presence of significant negative relationship between NPL/TL ratio while CAR was insignificant. Gizaw et al. (2015) studied the impact of credit risk on profitability performance of commercial banks in Ethiopia. The study involved 8 commercial banks for the period of 12 years. The study used both ROE and ROA as performance indicators and four credit risk indicators; NPL/TL, CAR, TL/TD and LLP/NPL ratios. Findings of this study showed that NPL/TL and CAR were significant and negative to ROE and ROA,

LLP/NPL was significant and positive to performance while TL/TD had insignificant effect on performance. In 2010 Kithinji performed a study in Kenya on the credit risk management and profitability of commercial banks in Kenya. In this study performance indicator used was ROA and credit risk indicators were NPL/TL and TL/TA ratios. The regression results indicated that there was no relationship between profits, amount of credit and the level of nonperforming loans. Kodithuwakku (2015) performed a study on the impact of credit risk management on performance of commercial banks in Sri Lanka. The study used ROA as performance indicator while it used LLP/NPL, NPL/TL, LLP/TA and LLP/NPL ratio. The result shows that non-performing loans and provisions have an adverse impact on the profitability.

Kaaya and Pastory (2013) researched on credit risk and commercial banks in Tanzania, using panel data analysis. The study used ROA and ROE as performance indicators and LLP/TL, LLP/NPL, LLP/NPL and NPL/TL ratios as credit risk indicators. The study concluded that the increase in credit risk tends to lower firm performance; both indicators produced negative coefficients which tend to lower profit level. From a few samples of studies reviewed above it is evident that best and widely used indicators of banks performance are ROE and ROA and the most used indicators of credit risk performance are NPL/TL, CAR, TL/TD and LLP/NPL ratios.

2.5 Policy Review

The primary purpose of banks is to take deposits and lend the funds to needy customers. And since not all customers will manage to pay back the loan either on time or in full, it is natural that this lending business is very risky. And since banks play a very vital role in our economies any slip up in managing the financial sector

can cause very damaging effect to the economy. In the last three decades we have witnessed financial system failures that sent tremor beyond country and continent borders. The major one was the financial crises in the Latin America in the 1980s which resulted into the Basel accord. Leaders of the world saw the need to have a global standard to mitigate these far reaching risks. Basel Committee on Banking Supervision (BCBS, 2013, p.2) reported that, And under the condition that Latin American debt crisis had hit the economy heavily, the Basel Committee, backed by the G10 Governors, "resolved to halt the erosion of capital standards in their banking systems and to work towards greater convergence in the measurement of capital adequacy. This resulted in a broad consensus on a weighted approach to the measurement of risk, both on and off banks' balance sheets".

According to Patricia (1999, p. 1) as cited by Li & Zou (2014) the Basel I Accord has two fundamental roles. The first one is the promotion of soundness and stability of the international banking system by encouraging international banking organizations to improve their capital positions. And the second one is to provide fairness for competitions among banks. It was signed by all 12 members of Basel Committee and paved the way for a significant increase in the resources banks devote to measure and managing risks (Hull, 2012, p. 258). Basel I accord set a good base for risk management; however, after its implementation it was observed that there were still some gaps that needed fixing. Besides, there has been a rapid development towards larger and more complex banking groups with broader operations, from a global perspective (Lind, 2005, p. 23&24) as cited by Li & Zou (2014). That is when the Basel committee came up with the Basel II Accord which focused on three pillars;

Minimum Capital Requirement, Supervisory Review and Market Discipline. Now we have Basel III which was published in 2009 and there are six parts in theregulations:1. Capital definition and requirements, 2. Capital conservation buffer, 3. Countercyclical buffer, 4. Leverage ratio, 5. Liquidity ratio, 6. Counterparty credit risk (Hull, 2012). This evolution of the Basel Accord from Basel I to Basel III gives a clear picture that credit risk management is of great importance to banks and to our economy. All these efforts to introduce new regulations is to enhance level of credit risk management. We have seen that before Basel I banks operated under very small capitalization that lead to easy bankruptcy. Challenges are still there but hopefully when all banks fully adopt the Basel III Accord, credit risks will be minimized to a large extent.

According to the Bank of Tanzania (BOT)'s Banking and Financial Institutions (Management of Risk Assets) Regulations, 2014, the Board of Directors of every bank or financial institution shall ensure that appropriate credit risk management policies are in place and are consistent with principles set forth in the Risk Management Guidelines for Banks and Financial Institutions issued by BOT.

All banks are required to review their credit policies at least once every year in order to incorporate current market developments. As a matter of policy, the loan portfolio has to be reviewed in every quarter and each facility to be categorized as either; current, especially mentioned, substandard, doubtful or loss. BOT recognizes non-performing loans (NPL) as those loans in the category of substandard, doubtful and loss.

2.6 Research Gap

From the empirical literature review we have noted that many studies have been conducted around the world but only a few in Tanzania. So far only three studies focused on the relation between credit risk and bank performance, these are Kaaya & Pastory (2013), Abdallah et al. (2014) and Qin & Pastory (2012).

However, these studies used samples that were too small to truly produce findings that reflect the picture of the whole industry. None of the studies used the four credit risk indicators (CAR, LDR, LLP and NPLR). Also, the industry has been experiencing a growth of about 20% per annum and so dynamics have changed since a similar study was performed. This study will include most current data. It is also good to note that new regulations were issued by BOT in 2014 and so there is a change on how banks used to operate as far as credit risk management is concerned.

After reviewing the above studies that have been carried out in Tanzania I have come to a conclusion that there is a big gap to fill and a new study is justified to be carried out. And I am very confident that the result will be useful to all stakeholders who will access it.

2.7 Conceptual framework

The theoretical framework used in our study can be illustrated in the following research model:

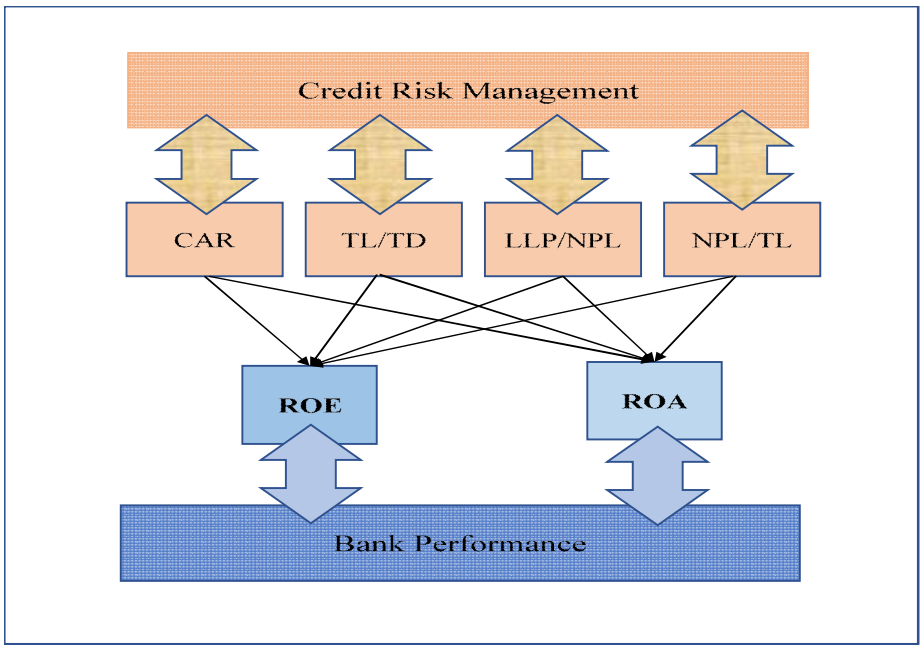

Figure 2.1Research Model

ROA: Return on Assets, ROE: Return on Equity, CAR: Capital Adequacy Ratio, TL/TD: Total Loans to Total Deposits Ratio, LLP/NPL: Loan Loss Provisions to Non-Performing Loans, NPL/TL: Non-performing Loans to Total Loans

2.8 Hypotheses

The following hypotheses were tested:

Hypothesis I:

There is a relationship between CAR, TL/TD, LLP/NPL and NPL/TL ratios and ROE of commercial banks.

Hypothesis II:

There is a relationship between CAR, TL/TD, LLP/NPL and NPL/TL ratios and ROA of commercial banks.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Overview

This chapter presents the research methodology used in the study. It covers research strategies, the population of companies involved, sample and sampling procedures, variables and measurement procedures, methods of data collection and data processing. The chapter ends with a section on data analysis models

3.2 Research Strategies

The study adopted the quantitative descriptive strategy with secondary data from commercial banks in Tanzania. It uses panel data regressions specifically pooled regression technique, to test for the effect of selected credit risk management indicators on the banks' financial performance measures such as Return on equity and return on assets. It is deductive in nature because it uses some of the hypothesized relationships between the selected credit risk management indicators and the financial performance indicators.

3.3 Survey Population

According to BOT (2014), there are 34 licensed commercial banks in Tanzania. These comprised the study's population and efforts were made to collect audited financial statements on them over the 11-year period. Availability of these sources of data was the main sampling criteria.

3.4 Sampling Design and Procedures

Availability of audited financial statement was the main inclusion/exclusion criteria. From the 34 licensed commercial banks and with great efforts, audited financial statements were obtained from 25 commercial banks only. These 25 banks represent over 90% of the total banking industry capital, 89% of total industry assets and 85% of the total loan portfolio. Compilation of the required financial statement items required for the computation of the credit risk management indicators lead to further exclusion of 6 banks for they did not have such data consistently over the study period 2005 to 2015. The final sample comprised therefore 19 commercial banks with consistent data over the period and hence a balanced panel. This provided a total of 209 observations.

3.5 Variables and their Measurement Procedures

3.5.1 Independent Variables

Data was collected for total loans (TL), total deposits (TD), total assets (TA), loan loss provisions (LLP), non-performing loans (NPL), profit before interest and tax (PBIT), profit after tax (PAT), Total equity (TE). Then the independent variable were the selected credit risk management indicators. These included Total Loans to Total Deposits (TL/TD) ratio, loan loss provisions to non-performing loans (LLP/NPL) ratio, non-performing loans to total liabilities (NPL/TL) ratio and capital adequacy ratio. The ratios were computed for each company for each year as follows:

Total Loans to Total Deposits (TL/TD) ratio, loan loss provisions to non-performing loans (LLP/NPL) ratio, non-performing loans to total loans (NPL/TL) ratio and capital adequacy ratio.

$$TLTD = \frac{Total\ loans}{Total\ deposits} = \frac{TL}{TD}$$

$$LLPNPL = \frac{Total\ loan\ loss\ provisons}{Total\ non-Perfor\min gLoans} = \frac{LLP}{NPL}$$

$$NPLTL = \frac{Total\ non-perfor\min g\ loans}{Total\ Loans} = \frac{NPL}{TL}$$

$$CAR = \frac{Total\ capital}{Total\ Assets} = \frac{C}{TA}$$

3.5.2 Banks' Financial Profitability

The primary goal of establishing a bank is to increase value of investors' capital. The value can only be increased if the bank is making profit. At the same time, effectiveness of management's strategy in operating in a risk area can be recognized by the profitability of the bank. This study is trying to examine the profitability of banks in relation to credit risk management. We all understand that most of the profits made by banks come from credits. The dependent variables were return on asset (ROA) and return on equity (ROE).

(a) Return on Equity (ROE)

ROE seems to be the best measure of bank performance because many studies in this area have used it. Gizaw, et al. (2015) used ROE when studying the impact of credit risk on profitability performance of commercial banks in Ethiopia, Hosna, et al. (2009) used ROE when researching on credit risk management and profitability in commercial banks in Sweden, Li & Zou (2014) used ROE when studying the impact of credit risk management on profitability of commercial banks in Europe, Abbas et al. (2014) used ROE to measure performance when they were studying the credit risk

exposure and performance of banking sector in Pakistan. ROE has been used in so many other studies around the world because of its proven reliability.

$$ROE = \frac{profit\ after\ tax}{Total\ Equity} = \frac{PAT}{TE}$$

(b) Return on Assets (ROA)

ROA is a reliable tool for measuring performance and it has been used in many studies all over the world. Kolapo et al. (2012) used ROA as a measure of bank performance in Nigeria and concluded that the effect of credit risk on bank performance measured by the Return on Assets of banks is cross-sectional invariant. Lalon (2015) used ROA in a regression analysis while studying the Credit Risk Management (CRM) Practices in Commercial Banks of Bangladesh: "A Study on Basic Bank Ltd." and observed that when the amount of NPLR will increase, ROA will decrease and vice versa. Many other researchers around the world have relied on ROA to measure profitability of banks.

$$ROA = \frac{profit\ before\ \text{int}erest\ and\ tax}{Total\ Assets} = \frac{PBIT}{TA}$$

3.6 Methods of Data Collection

Commercial banks in Tanzania are required by law to publish and well as submit to Bank of Tanzania their financial statements on quarterly basis. Just like any other company they are also required to publish annual audited financial statements. Audited financial statements of each commercial banks over the study period were collected from various sources – BOT, Company websites and from the company's head offices. Documents needed to bear signatories of their respective board

members to be considered reliable. A spread sheet was created in Microsoft Excel and the components required for the computation of the independent and dependent variables were painstakingly extracted and entered into the spreadsheet. The ratios were then computed. The resulting data sheet containing the relevant ratios was then exported to STAT 13 for further analysis.

3.7 Data Processing and Analysis

The model adopted for this study is underpinned to the model of Kolapo et al. (2012, Hosna et al. (2009), Kithinji (2010), Poundel (2012), which studied the effect of credit risk and commercial bank performance. This study has adopted the same analysis method by measuring profitability of banks by using both ROE and ROA while these being the function of CAR, LDR, LLP and NPLR.

The model for this study functionally becomes;

$$ROE = \beta_0 + \beta_1 NPL/TL + \beta_2 LLP/NPL + \beta_3 TL/TD + \beta_4 CAR + \mu_t \quad (1)$$

$$ROA = \beta_0 + \beta_1 NPL/TL + \beta_2 LLP/NPL + \beta_3 TL/TD + \beta_4 CAR + \mu_t \quad (2)$$

Descriptive statistics were used to describe the different ratios and BOT indicators were used to benchmark such ratios. The models were run in Panel data econometric formats in a number of stages. For each model, a pooled regression was estimated.

CHAPTER FOUR

4.0 FINDINGS AND DISCUSSIONS

4.1 Overview

This chapter presents and discusses the findings from the pooled regression analysis about the impact of the four independent variables to the profitability of commercial banks.

4.2 Sample Description

Tables 4.1 and 4.2 presents panel descriptive statistics. The overall quality of data is shown as strongly balanced meaning for 11 years (2005 to 2015) all 19 banks were able to provide data for every independent variable as required by the study. There was no any missing data in any category for the whole period of study. For **NPL/TL;** Results show that the mean is 9%, meaning that for 11 years under the study for all 19 banks 9% of the loan portfolio was categorized as not performing. It also shows that across studied banks NPL/TL ratio varied between 1% and 20.5% while within a single institution is varied between -4% and 25% in 11 years.

For the **LLP/NPL;** it is now shown that 2.2% of all non-performing loans were categorized as loss in the books of these banks. However, across the studied population LLP/NPL ratio varied between -0.8% and 4% while in a within one institution is varied from 1.8% and 8% during the period of study. For the **TL/TD**; for the period under study it is being observed that 63.6% of deposits were given out as loans. Results show that across the industry the TL/TD ratio varied between 42.9% to 122.9% while within an institution it varied between -16.8% to 225% during the period under study. **ROE re**sults have shown that equity invested in these

19 banks understudy produced a return of 11.2% every year under the period of study. However, across the industry ROE varied between -2.5% and 29% while within one institution it varied between -56% and 46% during these 11 years under study. From **ROA;** the table shows that during these 11 years assets of the 19 banks were producing a return of 1.89% per annum. Across the industry ROA varied between -0.3% and 5% while within institutions it varied between -6.8% and 5.8%.

CAR has a mean capital adequacy ratio for the 19 banks under this study was 12.8%. However, across the industry the CAR varied between 7% and 34% while within institutions it varied between -12% and 29%.

Table 4.1 Panel Descriptive Statistics Parameters

xtsum NPL TL LLP PBT PAT TA TE						
Variable		**Mean**	**Std. Dev.**	**Min**	**Max**	**Observations**
NPL	overall	21849.23	35143.07	110	270862	N = 209
	between		25735.12	2390.136	103999.9	n = 19
	within		24588.22	-70246.68	188711.3	T = 11
TL	overall	294106.9	452353.9	6977	3260587	N = 209
	between		358556.9	26832.99	1371267	n = 19
	within		286778.5	-875296.6	2183426	T = 11
LLP	overall	8975.602	12804.5	-3785	81765	N = 209
	between		9460.149	236	30132.27	n = 19
	within		8874.871	-18189.22	61087.78	T = 11
TD	overall	473166.8	681924.7	10451	4318695	N = 209
	between		593087.6	48205.45	2109298	n = 19
	within		360804	-973320.4	2682564	T = 11
PBT	overall	16739.73	36273.54	-70460	224304	N = 209
	between		30533.5	-957.1227	112322.6	n = 19
	within		20695.33	-61678.92	128721.1	T = 11
PAT	overall	11621.63	25645.73	-70187	155789	N = 209
	between		21390.27	-944.3067	78005.73	n = 19

	within		14904.95	-61804.37	89404.9	T = 11
TA	overall	584887.2	837104.5	13492	5407816	N = 209
	between		711166.7	55103.68	2476771	n = 19
	within		468296	-1148954	3515933	T = 11
TE	overall	72172.76	106785	-13464	687398	N = 209
	between		83643.23	2929.682	289695.3	n = 19
	within		68870.98	-156180.5	499560.4	T = 11

Table 4.2 Panel Descriptive Statistics Variables

xtsum NPLTL LLPNPL TLTD ROA ROE CAR						
Variable		**Mean**	**Std. Dev.**	**Min**	**Max**	**Observations**
NPLTL	overall	0.0906305	0.0757485	0.0009572	0.361456	N = 209
	between		0.0516846	0.0115876	0.2052605	n = 19
	within		0.0565241	-0.0467825	0.250627	T = 11
LLPNPL	overall	0.0219717	0.019123	-0.0300708	0.0905378	N = 209
	between		0.0121181	0.00881	0.0425421	n = 19
	within		0.01503	-0.0181569	0.0821233	T = 11
TLTD	overall	0.6360013	0.2625915	0.1321921	2.848556	N = 209
	between		0.1722975	0.429871	1.22973	n = 19
	within		0.2017302	-0.1689799	2.254828	T = 11
ROA	overall	0.0189151	0.0207685	-0.0769285	0.070086	N = 209
	between		0.0153628	-0.0038473	0.0501993	n = 19
	within		0.0143757	-0.0683619	0.0585231	T = 11
ROE	overall	0.1124971	0.1453301	-0.63388	0.41699	N = 209
	between		0.0940719	-0.0256532	0.2928447	n = 19
	within		0.11268	-0.566324	0.4639462	T = 11

4.3 Findings

4.3.1 Return on Equity

Table 4.3 present the results of pooled regression of return on equity on the credit risk management indicators.

Table 4.3 Effect on ROE

regress ROE NPLTL LLPNPL TLTD CAR

Source	ss	df	MS		Number of obs	209
					F(4, 204)	11.78
Model	0.82453468	4	0.20613367		Prob > F	0
Residual	3.56860218	204	0.01749315		R-squared	0.1877
					Adj R-squared	0.1718
Total	4.39313685	208	0.02112085		Root MSE	0.13226

ROE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
NPLTL	-0.3053719	0.1514524	-2.02	0.045	-0.6039846	-0.0067592
LLPNPL	-2.413501	0.6078263	-3.97	0.000	-3.611928	-1.215073
TLTD	-0.0612945	0.0432666	-1.42	0.158	-0.1466015	0.0240126
CAR	0.1489553	0.1694345	0.88	0.380	-0.1851122	0.4830227
_cons	0.2131168	0.0265777	8.02	0.000	0.1607145	0.2655191

The overall results presented in Table 4.3 show that this regression analysis considered 209 observations. The F-Statistics = 11.78 $\rho < .001$, indicating that the model is significant, that is, it has power to predict the variation on ROE using the four credit risk management indicators used. Also, the R-square confirms that 18.77% of the variation in ROE is explained by the four credit risk management indicators.

Relationship between ROE and NPL/TL is statistically significant ($\rho = .045$) meaning that any rise in NPL/TL ratio will lower the profitability of the bank. Relationship between ROE and CAR is positive but insignificant. The Relationship between ROE and TL/TD is negative but insignificant. However, relationship between ROE and LLP/NPL is statistically significantly negative ($\rho < .001$), meaning that any increase of the LLP/NPL ratio will cause a decrease in ROE.

4.3.2 Return on Asset

Table 4.4 present the results of pooled regression of return on assets on the credit risk management indicators

Table 4.4 Effect on ROA

regress ROA NPLTL LLPNPL TLTD CAR

Source	SS	df	MS		Number of obs	209
					F(4, 204)	15.45
Model	0.020861339	4	0.005215335		Prob > F	0
Residual	0.068855578	204	0.000337527		R-squared	0.2325
					Adj R-squared	0.2175
Total	0.089716917	208	0.000431331		Root MSE	0.01837

ROA	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
NPLTL	-0.0524844	0.0210376	-2.49	0.013	-0.0939635	-0.0110054
LLPNPL	-0.3622576	0.0844306	-4.29	0	-0.5287262	-0.1957891
TLTD	-0.0076613	0.00601	-1.27	0.204	-0.019511	0.0041883
CAR	0.0936046	0.0235354	3.98	0	0.0472007	0.1400086
_cons	0.0245211	0.0036918	6.64	0	0.0172421	0.0318

The overall results presented in Table 4.4 show that this regression analysis considered 209 observations. The F-Statistics = 15.45, $\rho < .001$, indicating that the model is significant, that is, it has power to predict the variation on ROA using the four credit risk management indicators used. Also, the R-square confirms that 23.25% of the variation in ROE is explained by the four credit risk management indicators. Relationship between ROA and NPL/TL is statistically significant ($\rho = .013$) meaning that any rise in NPL/TL ratio will lower the profitability of the bank. Relationship between ROA and CAR is positive and statistically significant ($\rho <$

.001). The Relationship between ROA and TL/TD is negative but insignificant. However, relationship between ROA and LLP/NPL is statistically significantly negative ($\rho < .001$), meaning that any increase of the LLP/NPL ratio will cause a decrease in ROA.

4.4 Discussion

Observation in Table 4.3 showing negative and significant relationship between NPL/TL ratio and ROE is consistent with results shown by the study performed by Hosna, et al. (2009) in Sweden. This simply means that the more non-performing loans increase the more they reduce the bank's profit. Table 4.4 has also shown that the NPL/TL ratio affects the ROA significantly and negatively and this observation is similar to what Gizaw et al. (2013) observed in a similar study in Ethiopia. Kolapo et al. (2012) also observed the same results in Nigeria.

This study has observed that CAR has a positive but insignificant impact on ROE but has a positive and significant impact on the ROA. This means the more the capital adequacy ratio is increased the more the banks become profitable. It makes sense because more capital means more free money to lend to customers, and also bigger credit facilities can be offered to big customers, and so more profits. According to Li & Zou (2014) this result is not accordance with some of the previous researches, including the research conducted by Ara, Bakaeva and Sun (2009) in Sweden, the research conducted by Tibebu (2011) in Ethiopia and the research conducted by Samy and Magda (2009) in Egypt. All of these researches found a positive relationship between CAR and ROE or between CAR and ROA. From Table 4.3 and Table 4.4 this study has not been able to establish any

significant relationship between the TL/TD ratio and either ROE or ROA. The results were insignificant and negative. However, Kolapo et al. (2012) in a similar study in Nigeria observed that there was a significant and positive relationship between the TL/TD ratio with banks' profitability. This may be because of the stringent credit risk measures applied in Nigeria.

In both, Table 4.3 and Table 4.4, the LLP/NPL ratio has shown a significant negative relationship with ROE and ROA. This means any increase in provisions for bad debts with affect banks' profits directly. This observation is also in line with what Kolapo et al. (2012) observed in their study in Nigeria.

Hypothesis 1 which stated that there is a relationship between CAR, TL/TD, LLP/NPL and NPL/TL and ROE of commercial banks is supported for LLP/NPL and NPL/TL. Hypothesis 2 which stated that there is a relationship between CAR, TL/TD, LLP/NPL and NPL/TL and ROA of commercial banks is supported for NPL/TL, LLP/NPL and CAR.

CHAPTER FIVE

5.0 SUMMARY CONCLUSION IMPLICATIONS AND RECOMMENDATIONS

5.1 Overview

The purpose of this study was to determine the effect of credit risk management on profitability of commercial banks in Tanzania. The research was performed by collecting published audited financial data from 19 commercial banks in Tanzania for the 11-year period, between years 2005 to 2015. To measure profitability, we ROE and ROA were used. Credit risk management was measured using the following ratios - TL/TD, LLP/NPL, NPL/TL and CAR. Descriptive statistics, and pooled panel regression analysis techniques were used to analyse the data, and STATA software tool was used to run the models.

This chapter presents a summary of the key findings, concludes and draws implications. In additions to making recommendations, it provides suggestion for further research.

5.2 Summary of Key Results

Results indicated that there is a negative and significant relationship between NPL/TL, LLP/NPL and both ROE and ROA. It was also observed that CAR had no significant relationship with ROE but had a positive and significant relationship with ROA. Results also shown absence of any significant relationship between TL/TD and both ROE and ROA.

5.3 Conclusions

Three out of four independent variables (TL/TD, LLP/NPL, CAR) indicated a strong relationship with the two-dependent variable (ROE, ROA). It can therefore be concluded that credit risk management has a strong and significant impact on the profitability of commercial banks in Tanzania. It can also be concluded that, better credit risk management results into more profitability for commercial banks. Specifically lowering NPL relative to loan portfolio (TL) improves the banks' profitability, and so is lowering loan loss provision relative to NPL.

5.4 Implications

Results from the study imply that, if the NPL/TL, and LLP/NPL ratios are is kept as low as possible the bank will experience much better profitability. Meaning when the above-mentioned ratios are under control, there will be no loses to negate incomes that are earned from other sources. However, when credit portfolio is not well managed, many loans will turn bad and so require provisions or write-offs which will diminish earned profits. On the other side, CAR has to be kept as high as possible so as to have a positive effect on profitability. Currently minimum CAR in Tanzania is 12.5%. So, there is a double benefit for having it high; meeting the regulatory requirement and positively impacting the profitability of the bank.

5.5 Recommendations

From the results of this study it is strongly recommended that managers place a very high focus on the credit processing and portfolio management so as to avoid losses resulting from issuing bad loans or mismanagement of the portfolio that could result into good performing loans turning bad. Because these have a strong direct negative

impact on the profitability of the bank. It is also recommended that managers keep a close eye on the CAR so that it is as high as possible to avoid regulatory breach and to benefit on its positive impact on bank's profitability.

5.6 Limitations and Areas for Future Research

This study involved 19 commercial banks which were present in the whole period under study. However, since 2005 there are many new banks that came into the market and have managed to capture a significant market share. In that regard that was a limitation in this study, and so another study can be performed to include more recent banks.

The banking sector in Tanzania is growing at a very fast pace, and the market dynamics keep changing. Technology being one of the key factor that is impacting the way banking is being conducted. In few years to come, a significant number of loans might be processed through mobile applications, something that might change how credit risk management will be implemented. So, a study that includes the impact of mobile phone credit applications can be useful.

Lastly, but not the least, the study was limited to commercial banks only. Equally important research could be carried out in microfinance institutions such as microfinance NGOs as well as SACCOS.

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